



CITY OF RICHMOND

DEPARTMENT OF PUBLIC UTILITIES
OFFICE OF THE DIRECTOR

September 24, 2014

Mr. Fred Cunningham
MS4 Program Manager
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: City of Richmond Municipal Separate Storm Sewer System (MS4)
2013-2014 Annual Report for Permit VAR040005

Dear Mr. Cunningham:

Please find enclosed the annual report for July 1, 2013 through June 30, 2014. The annual report was prepared in accordance with current MS4 permit regulations, 4VAC50-60-1200, *et seq.*

If you have any questions or concerns please contact me at (804) 646-1378.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert C. Steidel", is written over a large, stylized circular flourish.

Robert C. Steidel
Director

Attachments: City of Richmond MS4 2013-2014 Annual Report
Attachment A: Monitoring Data
Attachment B: Illicit Discharge Investigation Summary
Attachment C: BMP Inventory Summary
Attachment D: List of new BMPs
Attachment E: List of Facilities Requiring SWPPPs

cc: Christopher Beschler, Acting Chief Administrative Officer
Willie Horton, Deputy Director
Jonet Prevost-White, Operations Manager

City of Richmond

Municipal Separate Storm Sewer System

2013 - 2014 Annual Report

Introduction

This annual report covers the reporting cycle July 1, 2013 through June 30, 2014 - Permit Year 1. The report includes the status of compliance with the permit conditions, the appropriateness of the best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures, and the reporting requirements of the general permit.

Roles and responsibilities described in the program plan have not changed during this reporting period. DPU administers all aspects of stormwater management including operation and maintenance, design, construction, and regulatory compliance. The City constructed no new Municipal Separate Storm Sewer System (MS4) outfalls during this reporting period.

The status of the MS4 program plan and a summary of the activities planned for the next reporting cycle are included in the following sections. The Utility continues to adjust to assuming responsibility for the VSMP Program as well as planning for the new MS4 Phase II General Permit. The Utility will plan for compliance with both programs during the next year. The new MCMs will incorporate the state stormwater regulations into the City's stormwater program.

The City of Richmond does not rely on another government entity to satisfy any of the permit obligations.

Monitoring data collected during this reporting cycle from the following creeks (Pocoshock, Pocosham, Crooked Branch (tributary to Reedy Creek) and Upham Brook) is included in Attachment (A).

The City investigated twenty-seven potential illicit discharges during this reporting cycle. The illicit discharges are documented in Attachment (B).

Land disturbing activities during the reporting cycle included 302 permits issued and 121.464 acres of land disturbance.

A full inventory of structural controls located within the City is included in Attachment (C).

A list of new structural controls placed in operation during the reporting cycle is included as Attachment (D).

MS4 Program Plan Compliance Status

1. Public Education & Outreach on stormwater impacts

Purpose

The objective of this BMP is to increase target audience knowledge about steps to take to reduce stormwater pollution and about the hazards of illegal discharges and improper waste disposal.



*Fourth district Councilwoman Kathy
Graziano at HHW event May 2013*

Measurable Goals

1a. Continue Public Education and Outreach program

1b. Program goals:

1. Increase knowledge on reducing stormwater pollution;
2. Increase knowledge on illegal discharge/improper waste disposal hazards;
3. Target program to audiences most likely to have significant stormwater impacts

1c. Program components:

1. ID three high priority water quality issues, including selection rationale

The three water quality issues we will focus our efforts on are

1. Pollution Prevention and Illicit Discharge Awareness
2. Reducing bacteria pollution from pet waste
3. Reducing nutrient pollution from improper application of fertilizers

2. ID and estimate target population size of audience who has most impact

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3. Develop messages to targeted audiences
4. Provide for public participation
5. Reach 20% of target audience;
6. Adjust messages as necessary.

Our estimates for target audiences for each of the issues are as follows:

<i>Water Quality Issue</i>	<i>Target Audience Population</i>	<i>Target Audience Population</i>
PP Awareness	All city residents	215,000
Pet Waste	Dog owners	56,000
Nutrient pollution	City residents, lawn care professionals	50,000

1d. Coordinate with other MS4s

As evidence of our public education and outreach effort, the following activities were held during the reporting period:



DPU employee Sarah Henrikson marking a storm drain. August 2013

High Priority Issue #1: Pollution Prevention & Illicit Discharge Awareness

Measureable Goal	# of People Reached	% of Target Audience Reached
Coordinated drain cleanings and markings	75	0.03%
Hosted Household Hazardous Waste Pickup	200	10%
Distribute FOG brochures to businesses	200	20%

High Priority Issue #2: Bacteria

Measureable Goal	# of People Reached	% of Target Audience Reached
Distributed Pet Waste Bags	34,400	10%
Attended community events & distributed bags	500	20%

High Priority Issue #3: Stormwater Education

Measureable Goal	# of People Reached	% of Target Audience Reached
Distributed PP information at Neighborhood Meetings	250	<1 %
Presented information to 4 th and 5 th graders in RPS	341	2%
Hosted Rain Barrel Decoration Contest for Middle School students	400	2%

*Rain barrels decorated
by RPS students
displayed at
Earth Day Festival.
April 2013*



Schedule of Activities for Next Reporting Cycle

During the next year, DPU will continue its public education efforts. The list of activities planned for next year is as follows:

High Priority Issue #1: Pollution Prevention & Illicit Discharge Awareness

Measureable Goal	Est. # of People Reached	Est. % of Target Audience Reached
Host neighborhood cleanup	75	3%
Household Hazardous Waste Collection Insert/Event	5,000	10%
Distribute FOG brochures to businesses	200	20%
Distribute commercials	40,000	20%
Write articles for newsletters	3 articles	20%
Educate new COR employees on pollution prevention	100	20%
Educate 5 th and 8 th graders on pollution prevention	2800	20%
Civic Association Meetings	20 meetings	20%

High Priority Issue #2: Bacteria

Measureable Goal	Est. # of bags	Est. % of Target Audience Reached
Distribute pet waste bags	35,000	30%

High Priority Issue #3: Nutrient Reduction

Measureable Goal	Est. # of People Reached	Est. % of Target Audience Reached
Public Service Announcement	40,000	20%
Conduct Nutrient Management Workshop with golf courses, lawn care professionals	10 businesses	30%
Provide posters at Garden Centers	5 businesses	20%

2. Public Involvement & Participation



Fifth & sixth graders from Lucille Brown MS plant shrubs in Forest Hill Park during "Team Wood Thrush Day". May 2013

Purpose

The objective of this BMP is to be a tool to promote public involvement in preventing polluted stormwater runoff from reaching the MS4.

Measurable Goals

2a. Maintain & post online an updated MS4 Program Plan and Annual Report.

A link to the MS4 Program Plan is here [MS4 Program Plan](#). A link to the Annual Report is here [MS4 Annual Report](#).

2b. Participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities annually.

As evidence of our Public Participation effort, Stormwater Utility staff participated and/or planned the following activities held during the reporting period:

Activity	Pollutant Target	Audience
Sponsored Rain Barrel Decoration Contest for RPS Students	Polluted Runoff	students
Hosted Household Hazardous Waste Collection Event	Hazardous waste	citizens
Participate in other watershed organizations	Nutrients, sediment, bacteria	citizens

2c. The MS4 Program Plan shall include written procedures for implementing this program.

Schedule of Activities for Next Reporting Cycle

Activity	Pollutant Target	Audience
Host stream cleanup in Bellemeade neighborhood	Trash	citizens
Host Household Hazardous Waste Collection Event	Hazardous waste	citizens
Participate in other watershed organizations	Nutrients, sediment, bacteria	citizens
Host Nutrient Management Workshop	Nutrients	lawn care professionals

3. Illicit Discharge Detection and Elimination



*SSO observed at Match Point Apts.
during outfall investigation Feb 2014*



*Same location after remediation.
August 2014*

Purpose

The objective of this Minimum Control Measure is to reduce the discharge of pollutants from the MS4, to protect water quality and ensure compliance with water quality standards and with the Clean Water Act. DPU has a process to investigate and reduce illicit discharges through the industrial pretreatment program and the Community Assisted Public Safety (CAPS) program.

A list of illicit discharges investigated in 2013 - 2014 is in Attachment B.

Measurable Goals

3a. Maintain an accurate storm sewer system map and information table.

DPU has a schedule to map the remaining storm sewer system by the end of the permit term, including all relevant required information. We intend to map points of discharge from the MS4 and outfalls to receiving waters. We expect to coordinate with adjacent MS4 permit holders, including VDOT.

3b. DPU has an ordinance that prohibits non-stormwater discharges into the storm sewer system, in accordance with federal, state, and local laws and regulations.

The ordinance that prohibits non-stormwater discharges can be read [here](#).

3c. DPU has procedures to inspect and identify unauthorized non-stormwater discharges, including illegal dumping to the MS4.

The department has procedures to inspect and identify unauthorized non-stormwater discharges.

The total number of outfalls screened during the reporting period was 126; 76 of the outfalls were dry, leaving 50 outfalls discharging; samples were collected from these outfalls. Results for the discharging outfalls are in Attachment A.

Field personnel observed two separate sanitary sewer overflows from privately owned sanitary infrastructure directly discharging to city creeks while performing outfall screening.

Location #1: Town and Country Apartments, 6400 Green Bank Rd.

Issue: On Jan. 9 2014, City staff identified a sanitary sewer overflow from a failed private sanitary lateral at Town and Country Apartments during outfall reconnaissance activities. The flow from the lateral was observed to be discharging directly to Pocosham Creek at an estimated rate of approximately 10-20 GPM.

Action: City staff informed management staff of the issue. Management was required to repair immediately the issue and stop the discharge. An incident report was forwarded to Code Enforcement. The sanitary back up was stopped within 24 hours. A notice of violation letter requiring abatement the area affected by the sanitary back-up was issued to the property owner.

Follow-up: A follow-up inspection on Feb 6, 2014 revealed the area as adequately remediated. The area will be schedule for additional observation once every 6 months until July 2018.

Location #2: Midlothian Village Apartments, 4000 Midlothian Turnpike

Issue: On Mar. 10, 2014, City staff observed evidence of a sanitary sewer overflow at a culvert along Crutchfield Avenue during outfall reconnaissance activities.

Action: Investigation revealed the sanitary impact had likely resulted from a back up of a private sanitary lateral discharging to Crooked Branch, a tributary to Reedy Creek. City crews cleared the blockage. However, since the overflow occurred in a section of Crooked Branch enclosed within concrete pipes, the inflow point could not be located. City staff notified the owner that if additional sanitary impacts were observed and traced to a failure in the property's private sanitary collection system, the City would pursue enforcement.

Follow-up: We scheduled the area for additional observation once every 6 months until September 2018. No evidence of additional sanitary impact has been observed.

Additionally, City staff observed three separate privately owned intake lines, which appeared to have been connected to Pocosham Creek for drawing water. We observed the intake lines while performing outfall-screening operations.

Schedule of Activities for Next Reporting Cycle

Throughout the permit term, DPU will continue to investigate and eliminate illicit discharges through the Industrial Waste & Pretreatment and CAPS programs.

4. Construction Site Stormwater Runoff Control

Purpose

The objective is to administer an erosion and sediment control program in accordance with the Virginia Erosion and Sediment Control Regulations, Section 4VAC50-30-40.

Measurable Goals

4a. applicable oversight

The program compiled the following statistics for construction site inspections during the reporting period:

ESC Activity	#
Total # of regulated land-disturbing activities	546
Total # of acres disturbed	121.5
Total # of inspections conducted	1855
Total # of enforcement actions taken	57
Notice to Comply	54
Stop Work Orders	3

Schedule of Activities for Next Reporting Cycle

DPU will continue to manage the ESC program.

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5. Post-construction stormwater management in new development and development on prior developed lands

Purpose

The objective is address post-construction stormwater runoff that enters the MS4 from new development and development of prior developed lands.

Measurable Goal

- 5a. Maintain applicable oversight requirements;
- 5b. Require design criteria for stormwater runoff controls;
- 5c. Inspect operate and verify maintenance of stormwater management facilities;
- 5d. Have an updated Program Plan;
- 5e. Track stormwater management facilities.

Post-construction Activity	#
Total # of inspections conducted	58
Total # of enforcement actions taken	0
Notice to Comply	0

Schedule of Activities for Next Reporting Cycle

DPU will continue to monitor and track stormwater management facilities, including operator owned and private facilities.



Photo from a Feb 2014 inspection of a SCM at Vulcan Materials.

6. Pollution prevention/good housekeeping for municipal operations



*Covered bulk material storage at
Hopkins Rd. Vehicle Maintenance Facility.
August 2014*

Purpose

The objective is to minimize or prevent pollutant discharge from daily operations (road and parking lot maintenance, bulk material storage, etc.) The objective is to prevent pollution at operations facilities from entering the MS4.

Measurable Goal

6a. Minimize or prevent pollution from daily operations;

6b. Identify all municipal high priority (9 types) facilities, and their activities that could contribute to pollution and develop SWPPPs for such facilities;

The list of city facilities that require SWPPPs is in Attachment E.

6c. Implement turf and landscape management plans for all areas greater than 1 acre that apply nutrients;

City staff is compiling the list of facilities that meet these criteria and will implement turf and landscape management plans for all locations that meet the criteria.

6d. Conduct training for employees;

City staff developed a training program for stormwater awareness for all city employees and for those employees involved in areas that are likely to have an effect on the MS4. The program will cover spill prevention, vehicle maintenance, bulk material storage, road and parking lot maintenance and facility maintenance. We developed a biennial training schedule to reach the appropriate personnel.

6e. Require municipal contractors use appropriate control measures for stormwater discharges.

City staff is developing a program to satisfy this requirement.

Schedule of Activities for Next Reporting Cycle



MS4 Training Program Plan City of Richmond



Employee training will cover material handling, road maintenance and vehicle repairs focusing on how to prevent stormwater pollution.

Employee Pollution Prevention and Training

Description

DPU will implement an employee-training program for operations staff involved with vehicle maintenance and field activities that may affect the MS4. The objective of this BMP is to provide pollution prevention training to City employees to inform them of proper practices to reduce the potential of pollutants entering the MS4.

Schedule of Activities for Next Reporting Cycle

During the next year, Pretreatment staff will deploy a Good Housekeeping training video as an online training course available to city employees in addition to area specific training. The training will be mandatory to all applicable employees.

Attachment A: Analytical Data for Flowing Outfalls Screened July 1, 2013-June 30, 2014

Outfall ID	Collection Date	Test	QUAL	Result	TPQL	Unit	Analytical Method
PKC-001	12/02/13	Total Suspended Solids		5	1	mg/L	SM18/2540 D
PKC-001	12/02/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PKC-001	12/02/13	E. Coli		22	1	MPN/100 mL	SM 20 9223 B
PKC-RCB	12/02/13	Total Suspended Solids		11	1	mg/L	SM18/2540 D
PKC-RCB	12/02/13	Ammonia		0.3	0.1	mg/L	EPA 350.1
PKC-RCB	12/02/13	E. Coli		727	1	MPN/100 mL	SM 20 9223 B
PKC-RCB150	12/02/13	Total Suspended Solids		20	1	mg/L	SM18/2540 D
PKC-RCB150	12/02/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PKC-RCB150	12/02/13	E. Coli		326	1	MPN/100 mL	SM 20 9223 B
PSC-001	12/02/13	Total Suspended Solids		4	1	mg/L	SM18/2540 D
PSC-001	12/02/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-001	12/02/13	E. Coli		36	1	MPN/100 mL	SM 20 9223 B
PSC-MOUTH	12/02/13	Total Suspended Solids		2	1	mg/L	SM18/2540 D
PSC-MOUTH	12/02/13	Ammonia		0.7	0.1	mg/L	EPA 350.1
PSC-MOUTH	12/02/13	E. Coli	>	2420	1	MPN/100 mL	SM 20 9223 B
PSC-002	12/03/13	E. Coli		2	1	MPN/100 mL	SM 20 9223 B
PSC-002	12/03/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-008	12/03/13	E. Coli		10	1	MPN/100 mL	SM 20 9223 B
PSC-008	12/03/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-010	12/03/13	E. Coli		866	1	MPN/100 mL	SM 20 9223 B
PSC-010	12/03/13	Ammonia		0.1	0.1	mg/L	EPA 350.1
PSC-013	12/17/13	E. Coli		2	1	MPN/100 mL	SM 20 9223 B
PSC-013	12/17/13	Ammonia		0.2	0.1	mg/L	EPA 350.1
PSC-014	12/17/13	E. Coli		4	1	MPN/100 mL	SM 20 9223 B
PSC-014	12/17/13	Ammonia		0.1	0.1	mg/L	EPA 350.1
PSC-015	12/17/13	E. Coli		4	1	MPN/100 mL	SM 20 9223 B
PSC-015	12/17/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-019	12/17/13	E. Coli		40	1	MPN/100 mL	SM 20 9223 B
PSC-019	12/17/13	Ammonia		0.1	0.1	mg/L	EPA 350.1

PSC-022	12/17/13	E. Coli		88	1	MPN/100 mL	SM 20 9223 B
PSC-022	12/17/13	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-022	12/17/13	Total Suspended Solids		4	1	mg/L	SM18/2540 D
PSC-Mouth Resample	12/17/13	E. Coli	>	2420	1	MPN/100 mL	SM 20 9223 B
PSC-Mouth Resample	12/17/13	Ammonia		0.2	0.1	mg/L	EPA 350.1
PSC-029	12/20/13	E. Coli		46	1	MPN/100 mL	SM 20 9223 B
PSC-032	12/20/13	E. Coli		980	1	MPN/100 mL	SM 20 9223 B
PSC-032	01/02/14	E. Coli		1410	1	MPN/100 mL	SM 20 9223 B
PSC-032	01/02/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-032	04/30/14	Fluoride		0.6	0.2	mg/L	SM 20 4500 F C
PSC-032	04/30/14	Orthophosphate		1.8	0.1	mg/L	SM 18 4500 P E
PSC-033	12/20/13	E. Coli		67	1	MPN/100 mL	SM 20 9223 B
PSC-034	12/20/13	E. Coli		41	1	MPN/100 mL	SM 20 9223 B
PSC-036	12/20/13	E. Coli	<	1	1	MPN/100 mL	SM 20 9223 B
PSC-029	01/02/14	E. Coli		25	1	MPN/100 mL	SM 20 9223 B
PSC-029	01/02/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-033	01/02/14	E. Coli		51	1	MPN/100 mL	SM 20 9223 B
PSC-033	01/02/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-034	01/02/14	E. Coli	>	2420	1	MPN/100 mL	SM 20 9223 B
PSC-034	01/02/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-036	01/02/14	E. Coli	<	1	1	MPN/100 mL	SM 20 9223 B
PSC-036	01/02/14	Ammonia		0.1	0.1	mg/L	EPA 350.1
PSC-041	01/02/14	E. Coli		387	1	MPN/100 mL	SM 20 9223 B
PSC-041	01/02/14	Ammonia		0.2	0.1	mg/L	EPA 350.1
PSC-041 Resample	02/10/14	E. Coli		72	1	MPN/100 mL	SM 20 9223 B
PSC-041 Resample	02/10/14	Ammonia		0.2	0.1	mg/L	EPA 350.1
PSC-042	01/02/14	E. Coli		326	1	MPN/100 mL	SM 20 9223 B
PSC-042	01/02/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-042 Resample	02/10/14	E. Coli		10	1	MPN/100 mL	SM 20 9223 B
PSC-042 Resample	02/10/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-047	01/09/14	E. Coli		3	1	MPN/100 mL	SM 20 9223 B
PSC-047	01/09/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-050	01/09/14	E. Coli		8	1	MPN/100 mL	SM 20 9223 B
PSC-050	01/09/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1

PSC-054	01/21/14	E. Coli		1	1	MPN/100 mL	SM 20 9223 B
PSC-054	01/21/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-056	01/21/14	E. Coli		71	1	MPN/100 mL	SM 20 9223 B
PSC-056	01/21/14	Ammonia		0.2	0.1	mg/L	EPA 350.1
PSC-056	01/21/14	Total Suspended Solids		3	1	mg/L	SM18/2540 D
PSC-058	02/10/14	E. Coli		23	1	MPN/100 mL	SM 20 9223 B
PSC-058	02/10/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-062	02/10/14	E. Coli		74	1	MPN/100 mL	SM 20 9223 B
PSC-062	02/10/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-069	02/11/14	E. Coli		13	1	MPN/100 mL	SM 20 9223 B
PSC-069	02/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-071	02/11/14	E. Coli		11	1	MPN/100 mL	SM 20 9223 B
PSC-071	02/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-079	02/11/14	E. Coli		1	1	MPN/100 mL	SM 20 9223 B
PSC-079	02/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-082	02/11/14	E. Coli	<	1	1	MPN/100 mL	SM 20 9223 B
PSC-082	02/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-083	02/11/14	E. Coli	<	1	1	MPN/100 mL	SM 20 9223 B
PSC-083	02/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-086	02/12/14	E. Coli		19	1	MPN/100 mL	SM 20 9223 B
PSC-086	02/12/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-088	02/12/14	E. Coli		42	1	MPN/100 mL	SM 20 9223 B
PSC-088	02/12/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-089	02/12/14	E. Coli		73	1	MPN/100 mL	SM 20 9223 B
PSC-089	02/12/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-091	02/12/14	E. Coli	<	1	1	MPN/100 mL	SM 20 9223 B
PSC-091	02/12/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-093	02/12/14	E. Coli		66	1	MPN/100 mL	SM 20 9223 B
PSC-093	02/12/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-096	02/24/14	E. Coli		1	1	MPN/100 mL	SM 20 9223 B
PSC-096	02/24/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-097	02/24/14	E. Coli		1	1	MPN/100 mL	SM 20 9223 B
PSC-097	02/24/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
PSC-101	02/24/14	E. Coli		3	1	MPN/100 mL	SM 20 9223 B

PSC-101	02/24/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
CBC-002	03/10/14	E. Coli		3	1	MPN/100 mL	SM 20 9223 B
CBC-002	03/10/14	Ammonia		0.4	0.1	mg/L	EPA 350.1
CBC-002	03/10/14	Total Suspended Solids		11	1	mg/L	SM18/2540 D
CBC-003	03/10/14	E. Coli		20	1	MPN/100 mL	SM 20 9223 B
CBC-003	03/10/14	Ammonia		0.2	0.1	mg/L	EPA 350.1
CBC-004	03/10/14	E. Coli		196	1	MPN/100 mL	SM 20 9223 B
CBC-004	03/10/14	Ammonia		0.1	0.1	mg/L	EPA 350.1
CBC-Mouth	03/10/14	E. Coli		73	1	MPN/100 mL	SM 20 9223 B
CBC-Mouth	03/10/14	Ammonia		0.1	0.1	mg/L	EPA 350.1
CBC-Mouth	03/10/14	Total Suspended Solids		7	1	mg/L	SM18/2540 D
CBC- Wythe	03/10/14	E. Coli		2420	1	MPN/100 mL	SM 20 9223 B
CBC- Wythe	03/10/14	Ammonia		0.3	0.1	mg/L	EPA 350.1
CBC- Wythe	03/10/14	Total Suspended Solids		33	1	mg/L	SM18/2540 D
CBC- Wythe	03/10/14	TKN		1.10	1	mg/L	EPA 351.2
CBC- Wythe	03/10/14	Nitrate+Nitrite		0.6	0.5	mg/L	EPA 353.2
CBC- Wythe	03/10/14	Total Phosphorus		0.1	0.1	mg/L	EPA 365.1
UB-005	03/11/14	E. Coli		172	1	MPN/100 mL	SM 20 9223 B
UB-005	03/11/14	Ammonia	<	0.1	0.1	mg/L	EPA 350.1
UB-005	03/11/14	Total Suspended Solids		3	1	mg/L	SM18/2540 D
UB-RHB	03/11/14	E. Coli		75	1	MPN/100 mL	SM 20 9223 B
UB-RHB	03/11/14	Ammonia		0.2	0.1	mg/L	EPA 350.1
UB-RHB	03/11/14	Total Suspended Solids		4	1	mg/L	SM18/2540 D

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
07/01/2013	COR IDDE PERSONNEL observed approximately 7 gallons of abandoned used motor oil in two partially capped 5-gallon pails situated in a drainage ditch along Ernest Road during routine field activities. The pails were observed to be stored in a slantways position. Evidence of minor leakage from one of the 5-gallon pails was observed.	Both 5-gallon pails were stabilized and stored for later removal by a contracted hazardous waste disposal company. One motion-activated observation camera was installed at the site.	Data from the camera was retrieved and reviewed periodically for a period of approximately five months. No further evidence of illegal dumping was observed during the course of the observation.	11/26/2013
7/26/2013	COR IDDE PERSONNEL responded to an internal request to investigate a drain line associated with a residential pool at 4210 Apache Court which was observed in the vicinity of Cherokee Creek / Cherokee Lake. The property owner stated pool is maintained year-round and therefore is never drained. Observed piping discharges small amounts of backwash to the turf grass area nearby. No evidence of discharge was observed during site reconnaissance.	An explanation of what is considered an allowable discharge and a verbal warning not to discharge chlorinated pool water or other illegal substances into the MS4 were issued to the homeowner.		07/26/2013
08/23/2013	COR IDDE PERSONNEL responded to an internal request to investigate a drop inlet near the intersection of Rockbridge and MacTavish Streets for the possible presence of a sanitary component. Obvious evidence of a sanitary impact was not observed during the initial site reconnaissance.	Six additional observation events of the inlet were scheduled in an attempt to determine if a sanitary component was impacting the inlet.	Obvious evidence of a sanitary impact was not observed during any of the observation events.	02/02/2014
09/16/2013	COR IDDE PERSONNEL observed a large area of staining near a service door which leads to a nearby storm drain at a convenience store at 2012 Maury Street. The business owner stated that waste mop water from kitchen area was dumped out of the service door as a means of disposal. Areas of stained soil were also observed in the vicinity.	A verbal warning not to discharge wastewater into areas drained by the MS4 and a request to remediate the impacted area were issued to the business owner.	A follow-up inspection revealed that impacted soils had been removed. No additional evidence of dumping was observed.	09/20/2013
09/16/2013	COR IDDE PERSONNEL observed multiple improperly stored containers of fats, oil and grease (FOG) material and an area of associated staining leading to a nearby storm drain at a convenience store located at 911 Jefferson Davis Highway.	A verbal warning regarding improper storage of materials in areas drained by the MS4 and a request to remediate the impacted area were issued to the business owner. Additional observation events were scheduled to observe site conditions.	The initial follow-up inspection of the site revealed that the FOG-containing material had been removed from the site. Additional site observations did not reveal evidence of improper material storage at the site.	11/21/2013

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
9/18/2013	COR IDDE PERSONNEL responded to a forwarded request to investigate two abandoned 55-gallon drums containing kerosene contaminated water near the intersection of Dale and Trenton Avenue. The drums were observed to be overturned. One of the drums was observed to be releasing its contents into a nearby MS4 drainage ditch.	COR IDDE PERSONNEL righted the drums and applied sorbent to the released material. Drums were collected and disposed of by a contracted hazardous waste disposal company. Two motion-activated observation cameras have been installed at the site.	Camera data is retrieved and reviewed every 2 months. As of the issuance of this summary report, no evidence of further dumping of soluble and/or erodible material has been collected. The cameras are slated to be removed in September of 2014.	
09/19/2013	COR IDDE PERSONNEL received a forwarded citizen report that employees of River City Rubbish, located at 3009 W. Leigh Street, had dumped heating oil from a scrap AST into an alleyway behind the facility.	Site visit revealed a discharge of approximately 10-15 gallons of heating oil to the alleyway. A notice of violation letter which required immediate remediation of the impacted area was hand-delivered to the business owner. Free product was contained using sorbent material. Impacted soils and spent sorbent were transported to a centralized waste treatment facility for disposal. A description of the incident was forwarded to the Code Enforcement Department for review.	A follow-up inspection of the facility revealed the area impacted by the release to have been adequately remediated.	10/01/2013
09/27/2013	COR IDDE PERSONNEL observed a William Builders Plus employee dumping approximately 5 gallons of wastewater generated while cleaning paint rollers near a storm drain. Worker was performing renovations at the property at 1301 Hull Street.	A verbal warning was issued to the employee at the dumping location. The property owner and the painting company owner were notified of the incident and issued a verbal warning regarding illicit discharge to the storm sewer system. The owner of the company stated that he would re-train each of his employees in the proper disposal of wastewater.		09/27/2013
10/03/2013	A review of Albro Creek outfall data prompted an investigation into a potential sanitary cross-connection.	Investigation revealed infiltration of sanitary sewage into an MS4 drain pipe resulting in elevated E. Coli and Ammonia levels in Albro Creek. The issue was forwarded to the COR Sewer Maintenance Group for further investigation. A break in a nearby sewer pipe was identified using a CCTV sewer inspection probe. The damaged sewer line was replaced.	Additional sampling revealed that the sanitary impact to Albro has been successfully abated.	11/05/2013
11/05/2013	COR IDDE PERSONNEL observed a homeowner at 2501 Afton Avenue dumping waste ashes from a residential fireplace into a nearby storm drain.	An explanation of what is considered an allowable discharge and a verbal warning not to discharge illegal substances into the storm drain were issued to the homeowner.		11/05/2013

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
11/11/2013	COR IDDE PERSONNEL responded to an internal request to investigate a drainage ditch near 3021 Dorset Avenue for illegal dumping. The request was issued when a COR field crew reported a surface sheen in an area of standing water along the ditch line.	A natural sheen indicative of groundwater infiltration was observed at various points along the drainage ditch. Obvious evidence of illegal dumping was not observed during the inspection of the area.		11/11/2013
11/17/2014	COR IDDE PERSONNEL observed sudsy water discharging from a PVC pipe to an alley behind a laundromat located at 4610 Jefferson Davis Hwy.	Investigation of the discharge revealed that an overflow at the laundry facility had resulted in a back-up of laundry wastewater into the facility's basement. The back-up had triggered an automated sump pump unit installed in the basement. The sump unit was situated to discharge to the adjacent alleyway. The facility was notified to remediate the discharge. The business owner contracted a plumber to unblock the sewer line serving the laundromat.	Follow-up inspection did not reveal evidence of an illicit discharge. A description of the incident was forwarded to the City's code enforcement branch for review.	11/19/2013
11/19/2013	COR IDDE PERSONNEL received forwarded report of leaking 55-gallon drum containing unknown material behind a convenience store located at 1017 Jefferson Davis Highway. A description of the incident was also forwarded to the City's code enforcement branch for review.	Illicit Discharge personnel and Code Enforcement personnel performed a joint inspection of the facility. Inspection revealed that a 55-gallon drum containing FOG-material had deteriorated to the point where it had released its contents to the adjacent sidewalk. A notice of violation letter requiring remediation of the area impacted by the release and proper dispose of the drum was issued to the property owner.	A follow-up inspection of the facility revealed the drum had been removed and the area impacted by the release to have been adequately remediated.	12/02/2013
01/03/2014	COR IDDE PERSONNEL received forwarded report of a maintenance company pressure-washing overhead ventilation filters for a commercial range outside a restaurant located at 700 E. Broad Street in a manner which was resulting in an illicit discharge to a nearby storm inlet.	COR IDDE PERSONNEL responded to the report while the pressure-washing activity was actively occurring. COR IDDE PERSONNEL issued a verbal warning to the maintenance contractor regarding the illicit discharge. COR IDDE PERSONNEL also issued a Notice of Deficiency to the owner of the property.	A follow-up FOG inspection was performed at the site to ensure the facility was adequately able to pre-treat FOG-laden wastewater and inform managerial staff that all FOG-containing wastewater was to be discharged through pre-treatment devices which were plumbed to the sanitary sewer system.	01/07/2014

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
01/21/2014	COR IDDE PERSONNEL received a forwarded report of a resident at 2501 Afton Avenue dumping waste ashes from fireplace into a nearby storm drain.	An interview with the homeowner at 2501 Afton Avenue along with an observation of the drop inlet revealed evidence of additional dumping. The homeowner was issued a Notice of Violation.	A follow-up inspection of the drop inlet did not reveal evidence of additional dumping.	02/21/2014
01/22/2014	COR IDDE PERSONNEL observed a sanitary discharge from a broken cleanout in a parking area associated with a restaurant located at 6835 Midlothian Turnpike.	The business owner was not onsite at the initial discovery of the discharge. COR IDDE PERSONNEL spoke with the manager of the facility and informed him of the issue. The employee stated the business owner would be present at the site the following day. A notice of violation letter requiring immediate repair of the line was hand delivered to the business owner the following day.	A follow-up inspection of the cleanout revealed that the discharge had been abated and the sanitary cleanout had been adequately repaired.	02/05/2014
02/03/2014	COR IDDE PERSONNEL received a citizen complaint of possible material storage concerns at a residential property located at 1401 Sunbury which was being utilized as an ad-hoc automotive repair business.	Illicit Discharge personnel and Code Enforcement personnel performed a joint inspection of the property. Since there were multiple code enforcement violations, code enforcement personnel opted to issue a notice of violation letter which combined the concerns of both departments. A notice of violation letter requiring abatement of code enforcement concerns and material storage concerns was issued onsite.	A follow-up inspection of the residential property revealed the area to have been adequately remediated.	02/20/2014
02/06/2014	COR IDDE PERSONNEL received a forwarded internal report of a sanitary overflow from a failed private sanitary lateral at Match Point Apartments located at 5818 Westower Avenue.	Illicit Discharge personnel and Code Enforcement personnel performed a joint inspection of the property. The flow from the lateral was observed to be discharging directly to an unnamed tributary of Powhite Creek at an estimated rate of approximately 5-10 GPM. Illicit discharge personnel notified facility management that they must immediately repair the issue to stop the discharge to Powhite Creek. Additionally, code enforcement personnel opted to issue a notice of violation. The discharge was stopped within 24-hours of its discovery.	A follow-up inspection of the area impacted by the release revealed that the area had been adequately remediated. Additionally, the area where the release occurred is scheduled to be observed and/or sampled by COR IDDE PERSONNEL every six months. As of the issuance of this summary, no evidence of additional sanitary impact has been revealed.	03/05/2014

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
02/28/2014	COR IDDE PERSONNEL received a VDEQ-forwarded report of a heavy oil sheen which was observed in the Manchester Canal. The source of the oil sheen had been traced to an outfall pipe located near the property at 511 Bainbridge.	The sheen was initially suspected to be associated with a previous pollution complaint. VDEQ-contracted employees initialized remediation efforts to contain the oil discharge until the source of the discharge could be determined. COR IDDE PERSONNEL eventually tracked the discharge to a large diesel release at the Norfolk Southern facility at 405 W. 6 th Street which was entering the MS4 via a hidden grated drop inlet. COR IDDE PERSONNEL notified Norfolk Southern management personnel to immediately begin remediation to contain and dispose of the released diesel. A report of the City of Richmond's findings at the Norfolk Southern facility was forwarded to the VDEQ for review.	A follow-up inspection of the area impacted by the release revealed that the area had been adequately remediated.	03/12/2014

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
03/14/2014	COR IDDE PERSONNEL identified evidence of sanitary sewer overflow at a culvert along Crutchfield Avenue during outfall reconnaissance activities.	Investigation revealed the sanitary impact had likely resulted from a back-up of a private sanitary lateral at Midlothian Village Apartments located at 4000 Midlothian Turnpike which had entered MS4 / Crooked Branch. The blockage was cleared by COR personnel within 12 hours of its discovery. However, since the overflow occurred in a section of Crooked Branch which is enclosed within concrete pipes, COR personnel were only able to try and locate the exact inflow point using CCTV sewer inspection probes. Unfortunately, the inflow point could not be located. COR IDDE PERSONNEL notified the owner of the Midlothian Village property that if additional sanitary impacts were observed and traced to a failure in the property's private sanitary collection system, the City of Richmond would pursue enforcement.	The culvert at Crutchfield is scheduled to be observed and/or sampled by COR IDDE PERSONNEL every six months until September of 2018. As of the issuance of this summary, no evidence of additional sanitary impact has been revealed.	03/14/2014
03/25/2014	COR IDDE PERSONNEL received a citizen complaint of possible material storage concerns at a residential apartment complex located at 621 Warwick Village.	A site investigation revealed that a landscaping company had recently placed an uncovered and uncontained mulch stockpile on an asphalt parking area within 10 feet of a drop inlet. The drop inlet was plumbed to discharge to an unnamed tributary of Reedy Creek. The owner of the landscaping company stated the stockpile was to be stored there temporarily until it could be dispersed to landscaped areas throughout the apartment complex. COR IDDE PERSONNEL explained that based on the lack of adequate containment, the stockpile storage as it was observed may be considered a threatened discharge to the MS4. The landscaping company agreed to contain the stockpile on the down slope side and cover it with a tarpaulin at the end of each work day until the pile was completely dispersed.	A follow-up inspection late in the afternoon on 03/25/2014 revealed the stockpile to be adequately contained and covered. The stockpile was observed to have been removed from the parking on 04/11/2014.	04/11/2014
03/26/2014	COR IDDE PERSONNEL responded to an internal report that used cooking grease was repeatedly dumped outside of a restaurant located at 3300 Norfolk Street and was resulting in significant staining and grease accumulation along the sidewalk and in a nearby storm water drop inlet.	Illicit discharge personnel performed a site inspection of the area. Based on the findings, a NOV letter requiring remediation of the area impacted by the dumping was hand delivered to a corporate representative of the restaurant.	A follow-up inspection of the site on 04/11/2014 revealed that the area impacted by the dumping had been adequately remediated. Additionally, a dedicated waste grease receptacle was observed to have been installed at the site.	04/07/2014

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
04/9/2014	COR IDDE PERSONNEL received a forwarded internal report of a sanitary overflow to a drop inlet plumbed to drain to Grindall Creek. The source of the discharge was determined to be a failed private sanitary lateral at the Foxwood Apartments located at 5004 Snead Road. At the time of the report the sanitary overflow had been successfully abated by City personnel in an effort to stop the impact to Grindall Creek.	Illicit discharge personnel performed a site inspection of the impacted area. Based on the COR IDDE PERSONNEL sewer maintenance report of the overflow and the evidence observed onsite, a notice of violation letter was issued to the property owner stating any future failure to maintain private infrastructure which resulted in a discharge to MS4 would be considered an intentional violation of the storm sewer ordinance	The overflow area is scheduled to be observed by COR IDDE PERSONNEL every six months until October of 2018.	04/21/2014
04/30/2014	COR IDDE PERSONNEL received a forwarded internal report of a PVC pipe plumbed through the wall of a building located at 2207 Everette Street which was discharging cloudy water to an adjacent sidewalk which then drained to a drop inlet plumbed to drain to Grindall Creek.	Illicit discharge personnel determined the discharge pipe was associated with a nearby business and was discharging wastewater from an industrial wet saw used for cutting granite. COR IDDE PERSONNEL informed the business owner that the discharge was not allowed by local ordinance. A notice of violation letter requiring that process wastewater be plumbed directly to the sanitary sewer system was issued to the business owner. The owner stated that he would install a temporary closed system which directed wastewater to a portable sump pump system that recirculated the water back through the wet saw would be installed until a permanent system could be installed.	On 05/06/2014, a follow-up revealed that the temporary system had been installed and appeared to be functioning as designed. A 06/12/2014 inspection of the site revealed the PVC pipe had been permanently capped. No evidence of additional discharge was observed.	06/12/2014
06/03/2014	COR IDDE PERSONNEL received a citizen complaint of possible an illegal discharge of pool water at a municipal pool located at 2405 Hawthorne Avenue.	A site investigation revealed that a City of Richmond Department of Parks and Recreation-contracted pressure washing company had discharged water from a pool into a nearby park area. According to the contractor, they had been discharging the water which had accumulated in the pool during the off-season into a nearby sanitary sewer line when it had backed up and resulted in the release to the nearby park. The contractor stated that the water was de-chlorinated. COR IDDE PERSONNEL instructed the contract personnel that all discharges including those from pressure washing operations would have to be discharged directly into the sanitary line at a rate that did not result in a back-up. Field screenings collected from the pooled discharge water did not reveal the presence of chlorine.	A report of the incident was forwarded to Department of Parks and Recreation facility management staff.	06/03/2014

Attachment B: Illicit Discharge Detection and Elimination Summary

Initial Report Date	Issue Summary	Resolution	Follow-Up	Closure Date
06/17/2014	COR IDDE PERSONNEL observed the owner of a business located at 27 E. 2nd Street dump approximately 1 gallon of antifreeze in a storm drain in front of the business. COR IDDE PERSONNEL spoke with the business owner who stated he believed that the drop inlet was plumbed to drain to the City's wastewater treatment plant. COR IDDE PERSONNEL informed the business owner that the discharge as it was observed was illegal and that a notice of violation letter would be issued for the incident.	A notice of violation was hand-delivered to the business owner. The violation letter informed the business owner that any further discharges would be considered intentional illicit discharge and enforced as such.		06/18/2014

**Attachment C - Stormwater Management Facilities
as of June 30, 2014**

Facility Type	BMP Name/Description	Street #	Street Name	Total Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Brought Online	HUC 12	Impaired Water Segments	Owned	Maintenance Agreement ?	Most Recent Inspection
Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	8201	Ammonett Drive	0.03	0.03	0	07/20/07	20802050607	James River, Slate River, Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, James River UT (XZE),	Private	None	06/19/12
Wet Ponds	Forebay	4210	Apache Court	351.2	58.91	292.29	6/30/2005	20802050606	Slate River, Salles Creek, Salles Creek UT James River, Slate River,	Private	None	05/12/14
Bioswale	Bio-filtration	708	Bainbridge Street	1.17	1.05	0.12	02/16/08	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	10/31/11
Bioretention A/B Soils, Underdrain	Raingarden/basin	1000	Bainbridge Street	0.71	0.5	0.21	09/21/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	09/21/12
Underground Detention	Hydraulic Detention	2409	Bainbridge Street	0.52	0.18	0.34	09/27/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	03/22/14
Underground Detention	Hydraulic Detention	2409	Bainbridge Street	0.94	0.29	0.65	09/27/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	03/22/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.46	0.46	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.5	0.5	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.32	0.32	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.5	0.5	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.33	0.33	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.5	0.5	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Filtering Practices	Filtterra™	301	Belt Boulevard	0.36	0.36	0	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Underground Detention	Piped Detention	301	Belt Boulevard	11.55	10.71	0.84	01/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/15/14
Underground Detention	Piped Detention	23B	Boatwright Drive	0.52	0.52	0	07/15/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Falling Creek, Falling Creek Reservoir,	Private	None	03/17/14
Dry Detention Ponds	Detention Basin Concrete Swale with Weir for Detention	2845	Broad Rock Blvd	0.22	0	0.22	11/09/10	20802060102	Falling Creek UT, Horners Run, Falling Creek, Falling Creek Reservoir,	Private	None	05/12/14
Detention		2990	Broad Rock Blvd	0.45	0.23	0.22	03/02/12	20802060102	Falling Creek UT, Horners Run, James River, Slate River,	Private	None	06/19/12
Bioretention A/B Soils, Underdrain	Bioretention filter	6501	Buckhill Road	0.23	0.23	0	09/10/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Chickahominy River, North Run,	Private	None	09/21/11
Underground Detention	Piped Detention	4004	Cary Street Road	0.9	0.67	0.23	04/16/10	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	06/19/12
Underground Detention	Piped Detention	4004	Cary Street Road	0.66	0.45	0.21	04/16/10	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	06/19/12
Underground Detention	Piped Detention	4004	Cary Street Road	1.4	0.66	0.74	04/16/10	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	06/19/12
Filtering Practices	Filtterra™	4200	Cary Street Road	0.777	0.59	0.187	05/02/12	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	05/15/13
Filtering Practices	Filtterra™	4200	Cary Street Road	0.749	0.572	0.177	05/02/12	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	05/15/13
Underground Detention Dry Extended Detention Ponds	Piped Detention	4200	Cary Street Road Chamberlayne	2.15	1.663	0.487	05/02/12	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Almond Creek, Almond Creek UT (XYA),	Private	None	05/15/13
	Extended Detention Pond	1415	Parkway Chamberlayne	9.62	7.526	2.094	12/04/12	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	Pending	05/15/13
Filtering Practices	StormTech Chamber System	2219	Parkway	1.83	1.83	0	01/07/09	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, James River UT (XZE),	Public	Not required	05/15/13
Filtering Practices	Filtterra™	9131	Cherokee Road	0.26	0.26	0	09/30/09	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	07/27/11
Filtering Practices	Filtterra™	9131	Cherokee Road	0.75	0.75	0	09/30/09	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	07/27/11
Filtering Practices	Filtterra™	9131	Cherokee Road	1.05	1.05	0	09/30/09	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	07/27/11
Filtering Practices	Filtterra™	9131	Cherokee Road	1.05	1.05	0	09/30/09	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	07/27/11
Filtering Practices Dry Extended Detention Ponds	Filtterra™	9131	Cherokee Road	0.23	0.23	0	09/30/09	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	07/27/11
	Extended Detention	10655	Cherokee Road	0.89	0.89	0	09/01/09	20802050606	Slate River, Salles Creek, Salles Creek UT	Private	None	

**Attachment C - Stormwater Management Facilities
as of June 30, 2014**

Filtering Practices	Filterterra™	4300	Commerce Road	0.22	0.16	0.06	07/22/09	20802060101	Almond Creek, Almond Creek UT (XYA), Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Filtering Practices	Filterterra™	4300	Commerce Road	0.16	0.12	0.04	07/22/09	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Filtering Practices	Filterterra™	4300	Commerce Road	0.11	0.08	0.03	07/22/09	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Underground Detention	Piped Detention	315	Cowardin Ave	0.69	0.69	0	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Chickahominy River, North Run,	Private	None	04/01/14
Filtering Practices Vegetated Open Channels A/B Soils, No Underdrain	Filterterra™	1800	Crenshaw Way	0.54	0.378	0.162	04/27/11	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Public	Not required	
	Grassed Swale	4321	Custis Road	3.25	0.27	2.98	06/30/08	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Almond Creek, Almond Creek UT (XYA),	Private	None	06/19/12
Dry Detention Ponds	Detention Pond	815	Decatur Street Deepwater Terminal	1.08			03/05/09	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Nutrient Credits	Nutrient Credits	3600	Road Deepwater Terminal	37.3	17.7	19.6	04/15/14	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Dry Detention Ponds Bioretention C/D Soils, Underdrain	Detention Basin	5000	Road	0.89	0.89	0	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	06/19/12
	Bioretention Basin	2803	Dock Street	0.41	0.236	0.174	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	01/19/13
Filtering Practices Infiltration Practices w/o Sand, Vegetation	StormTech Underground Detention	102	East 10th Street	0.4	0.32	0.08	04/08/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	05/15/14
Bioretention C/D Soils, Underdrain	Infiltration Trench	801	East 4th Street	0.91	0.74	0.17	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	09/20/11
Infiltration Practices w/o Sand, Vegetation	Focal Point™	1810	East Cary Street	0.82	0.82	0	04/01/14	20802060101	James River, James River Tidal Freshwater (Upper) Estuary, Almond Creek, Almond Creek UT (XYA),	Private	None	
Infiltration Practices w/o Sand, Vegetation	Stormpure Unit	2100	East Cary Street	0.107	0.107	0	04/20/07	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
	Stormpure Unit	2101	East Cary Street	0.15	0.15	0	05/16/07	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	06/30/11
Filtering Practices	Filterterra™	2600	East Cary Street	0.06	0.06	0	11/07/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	06/12/13
Filtering Practices Bioretention C/D Soils, Underdrain	Filterterra™	2600	East Cary Street	0.06	0.06	0	11/07/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	06/12/13
Bioretention C/D Soils, Underdrain	Bioretention Cell	1015	East Clay Street	0.08	0.08	0	10/13/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	Yes	10/31/11
	Rain Garden	1709	East Clay Street	0.388	0.384	0.004	11/16/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Falling Creek, Falling Creek Reservoir,	Private	None	04/21/14
Filtering Practices	Filterterra™	1533	East Main Street	0.3	0.3	0	6/30/2005	20802060102	Falling Creek UT, Horners Run, Falling Creek, Falling Creek Reservoir,	Public	Not required	09/10/07
Filtering Practices	Filterterra™	1533	East Main Street	0.24	0.22	0.02	6/30/2005	20802060102	Falling Creek UT, Horners Run, Almond Creek, Almond Creek UT (XYA),	Public	Not required	09/10/07
Dry Detention Ponds	Detention Pond	2823	East Main Street	1.05	0.68	0.37	12/11/12	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Filtering Practices	Filterterra™	2823	East Main Street	0.41	0.3157	0.0943	12/11/12	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Hydrodynamic Structures Bioretention C/D Soils, Underdrain	Stormceptor™	4804	East Main Street	1.5	1.5	0	04/01/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	pending	11/10/11
Bioretention C/D Soils, Underdrain	Bioretention	3000	East Marshall Street	0.58	0.46	0.12	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	10/09/13
Infiltration Practices w/ Sand, Vegetation	Bioretention	3000	East Marshall Street	0.56	0.37	0.19	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	10/09/13
Infiltration Practices w/o Sand, Vegetation	Planter	3000	East Marshall Street	0.42	0.3	0.12	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	10/09/13
Infiltration Practices w/o Sand, Vegetation	Planter	3000	East Marshall Street	0.62	0.27	0.35	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	10/09/13
	Planter	3000	East Marshall Street	0.37	0.37	0	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Falling Creek, Falling Creek Reservoir,	Public	Not required	10/09/13
Bioretention Bioretention A/B Soils, Underdrain	Bioretention	4615	Ferguson Road				6/30/2005	20802060102	Falling Creek UT, Horners Run, Chickahominy River, North Run,	Public	Not required	01/01/14
	Bioretention Cell	5916	Ferguson Road	0.63	0.63	0	6/30/2005	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	pending	12/06/11
Underground Detention	Raintank	5916	Ferguson Road	2.69	0.99	1.7	6/30/2005	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT	Private	None	12/06/11

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Dry Detention Ponds	Detention Basin	7846	Forest Hill Ave	0.49	0.26	0.23	12/01/06	20802050607	James River, Slate River, Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Wet Ponds	Wet Pond	7945	Forest Hill Ave	13.05	13.05	0	6/30/2005	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	
Underground Detention	Piped Detention Reduced Impervious Area - No BMP Required	1 6001	Gateway Road Grove Avenue	1.06 0.92	0.68 0.66	0.38 0.26	12/06/10 09/21/10	20802050607 20802060403	Powwhite Creek, Rattlesnake Creek, Reedy Creek Chickahominy River, North Run, Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Private	None	03/15/14
Reduced Impervious Area Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	301	Hillwood Road	0.043	0.043	0	10/01/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	301	Hillwood Road	0.039	0.039	0	10/01/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Dry Detention Ponds	Detention Basin	200	Hioaks Road	4.2	2.52	1.68	03/19/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	08/18/11
Bioswale	Biofiltration Swale	721	Hull Street	1.17	1.05	0.12	02/16/08	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/12/14
Detention Basin	Detention Basin	913	Hull Street	0.25			11/16/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	03/12/14
Filtering Practices	StormTech Chamber North	920	Hull Street	1.08	1.06	0.02	03/05/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	
Filtering Practices	StormTech Chamber West	920	Hull Street	0.25	0.19	0.06	03/05/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	
Filtering Practices	StormTech Chamber East	920	Hull Street	0.4	0.31	0.09	03/05/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	
Dry Detention Ponds	Detention Basin	2128	Hull Street	1.25	0.44	0.81	05/15/14	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Aimona Creek, Aimona Creek UT (XYA),	Private	None	
Detention	Hydraulic Structure - Ditch	5326	Hull Street Road	8.5	3.28	8.49	05/10/10	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Aimona Creek, Aimona Creek UT (XYA),	Private	None	
Dry Detention Ponds	Detention Basin	1250	Ingram Ave	2.54	2.54	0	01/03/14	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Aimona Creek, Aimona Creek UT (XYA),	Private	None	
Dry Detention Ponds	Detention Basin	1250	Ingram Ave	3.28	3.28	0	01/03/14	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, Slate River,	Private	None	
Underground Detention	Piped Detention	6643	Jahnke Road	NA	NA	NA	01/14/09	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Aimona Creek, Aimona Creek UT (XYA),	Private	None	11/14/11
Detention	Hydraulic Detention/Ditch	1517	Jefferson Davis Hwy	0.67	0.2	0.47	04/09/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Aimona Creek, Aimona Creek UT (XYA),	Private	None	07/27/11
Hydrodynamic Structures	Contech CDS Vortex Separator	2600	Jefferson Davis Hwy	0.51	0.51	0	08/01/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Chickahominy River, North Run,	Private	None	06/12/13
Underground Detention	Piped Detention	1012	Lafayette Street	0.19	0.16	0.03	06/24/11	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Private	None	05/12/14
Filtering Practices	Filterra™	2412	Lakeview Ave	0.073	0.073	0	01/13/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Chickahominy River, North Run,	Private	None	
Underground Detention	Piped Detention	508	Libbie Ave	0.207	0.12	0.087	06/28/12	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Chickahominy River, North Run,	Private	None	
Underground Detention vegetated Open Channels A/B Soils, No Underdrain	Piped Detention Vegetated Filter Strip	1100 302	Libbie Ave Long Lane	1.3 0.94	0.704 0.28	0.596 0.66	05/05/14 08/05/13	20802060403 20802050607	Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River, Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Underground Detention	Piped Detention	901	McDonough Street	1.86	1.86	0	04/10/13	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Aimona Creek, Aimona Creek UT (XYA),	Private	None	
Parking Lot Detention Permeable Pavement w/o Sand, Vegetation C/D Soils, Bioretention A/B Soils, No Underdrain	Parking Lot Detention Green Alley - Permeable Pavers Between West Franklin St &	1538 3200	Mechanicsville Tpke Monument Ave	0.44 2.18	0.32 2.18	0.12 0	03/13/14 6/30/2005	20802060101 20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA), Broad Rock Creek, Gillies Creek, Goode Creek, James River, Slate River,	Private Public	None	
Underdrain Bioretention A/B Soils, No Underdrain	Bioretention	5609	New Kent Road	0.035	0.035	0	07/27/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	05/03/13
Underdrain Bioretention C/D Soils, Underdrain	Bioretention	5615	New Kent Road	0.063	0.063	0	05/04/13	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Almond Creek, Almond Creek UT (XYA),	Private	None	
	Bioretention	3200	Norfolk Street	1.16	1.16	0	09/24/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Aimona Creek, Aimona Creek UT (XYA),	Private	None	06/19/12
Underground Detention	Underground cistern	3200	Norfolk Street	0.93	0.93	0	09/24/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Aimona Creek, Aimona Creek UT (XYA),	Private	None	06/19/12
Underground Detention	Underground storage tank	500	North 18th Street	0.78	0.71	0.06	02/25/12	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Underground Detention	Piped Detention	202	North 20th Street	0.36	0.36	0	01/14/14	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	01/14/14
Underground Detention	Vortex Filter	1207	North 28th Street	0.69	0.56	0.13	12/14/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek,	Private	pending	

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Underground Detention	Vortex Filter	1207	North 28th Street	0.99	0.79	0.2	12/14/11	20802060101	Almond Creek, Almond Creek UT (XYA), Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	pending	
Underground Detention	Vortex Filter	1207	North 28th Street	0.08	0.01	0.07	12/14/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	pending	
Underground Detention Bioretention C/D Soils, Underdrain	Piped Detention	528	North 2nd Street	0.129	0.129	0	09/14/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	pending	
	Bioretention Cell	400 - 141	North 33rd Street	2.913	1.458	1.456	08/03/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	pending	04/23/13
Underground Detention	Rain Tank A	1301	North Boulevard	0.99	0.99	0	12/09/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	03/12/13
Underground Detention	Rain Tank B	1301	North Boulevard	1.14	1.14	0	12/09/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	03/12/13
Dry Detention Ponds Infiltration Practices w/ Sand, Vegetation	Detention Pond	1500	North Lombardy Street	3.48	2.26	1.22	08/15/14	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	
Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	3016	Patterson Avenue	0.162	0.147	0.015	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Chickahominy River, North Run,	Private	None	08/27/14
	Infiltration Trench	9	Paxton Road	0.26	0.135	0.125	6/30/2005	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Private	None	01/18/13
Underground Detention	Piped Detention	908	Perry Street	0.836	0.689	0.147	06/11/14	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Underground Detention Infiltration Practices w/o Sand, Vegetation	Piped Detention	909	Perry Street	0.883	0.684	0.199	07/11/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
	Infiltration Trench	1004	Perry Street	0.129	0.075	0.054	07/27/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Underground Detention	Cistern	1000	Porter Street	0.101	0.101	0	06/18/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	10/31/11
Permeable Pavement	Permeable Paver (north)	1000	Porter Street	0.037	0.022	0.015	06/18/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	10/31/11
Permeable Pavement	Permeable Paver (south)	1000	Porter Street	0.038	0.015	0.023	06/18/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	10/31/11
Underground Detention	Piped Detention Detention Basin and Parking Lot	1020	Porter Street	0.201	0.105	0.051	05/02/13	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Dry Detention Ponds	Detention Detention Wall - Parking Lot	5619	Pride Road	0.51	0.51	0	09/19/07	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Parking Lot Detention Bioretention C/D Soils, Underdrain	Detention	5619	Pride Road	0.49	0.49	0	09/19/07	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Almond Creek, Almond Creek UT (XYA),	Private	None	06/19/12
	Bioretention	1831	Rady Ct	0.03			03/04/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Private	None	06/19/12
Underground Detention Bioretention C/D Soils, Underdrain	Piped Detention	1601	Roadmill St	0.61	0.48	0.13	02/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, Slate River,	Private	None	03/17/14
Underdrain Infiltration Practices w/ Sand, Vegetation	Rain Garden	5204	Riverside Dr.	0.059	0.039	0.02	10/15/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Almond Creek, Almond Creek UT (XYA),	Private	None	
	Infiltration Trench	701	Saint James Street	0.626	0.626	0	07/06/11	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, James River UT (XZE),	Private	pending	
Bioswale	Vegetated Swale	4301	Saratoga Road	0.0145	0.0145	0	03/28/08	20802050606	Slate River, Salles Creek, Salles Creek UT James River, James River UT (XZE),	Private	None	06/19/12
Bioswale	Vegetated Swale	4311	Saratoga Road	0.0163	0.0163	0	03/28/08	20802050606	Slate River, Salles Creek, Salles Creek UT James River, Slate River,	Private	None	06/19/12
Underground Detention	Piped Detention	2211	Semmes Ave	0.97	0.76	0.21	10/22/12	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Public	Not required	10/22/12
Filtering Practices	Filterra™	621	South 2nd Street	0.16	0.15	0.01	6/30/2005	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Filtering Practices Bioretention C/D Soils, Underdrain	Filterra™	621	South 2nd Street	0.18	0.14	0.04	6/30/2005	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
	Rain Garden	401	South Harrison Street	0.99	0.53	0.46	05/20/08	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek	Private	None	06/19/12
	Stone Reservoir with underdrain going to CS	615, 617, 619	South Laurel Street	0.15	0.038	0.112	6/30/2005	20802050607	James River, Slate River, Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	Yes	05/15/13
Filtering Practices Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	210	South Wilton Road	0.114	0.114	0	6/30/2005	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Infiltration Practices w/o Sand, Vegetation	Infiltration Trench	210	South Wilton Road	0.095	0.095	0	6/30/2005	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	06/19/12
Infiltration Practices w/o Sand, Vegetation	Infiltration System	206	South Wilton Street	0.0477	0.0477	0	03/20/08	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek	Private	None	06/19/12

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Hydrodynamic Structures	Stormceptor™	9200	Stony Point Pkwy	1.48	1.48	0	03/01/10	20802050606	James River, James River UT (XZF), Slate River, Salles Creek, Salles Creek UT Falling Creek, Falling Creek Reservoir,	Private	pending	06/28/14
Dry Detention Ponds	Detention Basin	5720	Swanson Road	0.93	0.57	0.36	02/19/08	20802060102	Falling Creek UT, Horners Run, Falling Creek, Falling Creek Reservoir,	Private	None	05/12/14
Filtering Practices	Filtterra™	16	Tow Path Lane	0.32	0.11	0.21	6/30/2005	20802060102	Falling Creek UT, Horners Run, Almond Creek, Almond Creek UT (XYA),	Private	None	05/15/13
Dry Detention Ponds	Detention Basin	2101	Venable Street	0.69	0.69	0	03/20/08	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, Slate River,	Private	None	06/19/12
Hydrodynamic Structures	Stormceptor™	301	Virginia Street	0.53	0.53	0	09/28/06	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Falling Creek, Falling Creek Reservoir,	Private	None	
Filtering Practices Bioretention C/D Soils, Underdrain	Biofilter Media	3903	Walmsley Blvd	0.36	0.36	0	06/13/12	20802060102	Falling Creek UT, Horners Run, Almond Creek, Almond Creek UT (XYA),	Private	None	05/15/14
Bioretention C/D Soils, Underdrain	Bioretention	2409	Webber Ave	0.22	0.17	0.05	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Bioretention C/D Soils, Underdrain	Bioretention	2409	Webber Ave	0.36	0.29	0.07	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Bioretention C/D Soils, Underdrain	Bioretention	2409	Webber Ave	0.67	0.56	0.11	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Bioretention C/D Soils, Underdrain	Bioretention	2409	Webber Ave	0.3	0.27	0.03	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Bioretention C/D Soils, Underdrain	Bioretention	2409	Webber Ave	0.35	0.32	0.03	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	
Dry Extended Detention Ponds	Extended Detention Basin	2409	Webber Ave	1.84	1.17	0.67	06/20/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, James River, Slate River,	Public	Not required	
Underground Detention	Piped Detention	101	West 12th Street	0.505	0.404	0.101	06/19/14	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Underground Detention	Rainwater Tank	8.5	West Canal Street	1.206	1.004	0.201	05/12/11	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	pending	07/27/11
Filtering Practices Bioretention C/D Soils, Underdrain	StormTech Detention System	1320	West Cary Street	0.495	0.495	0	10/04/07	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek Almond Creek, Almond Creek UT (XYA),	Private	None	03/22/14
Bioretention C/D Soils, Underdrain	Bioretention	219	West Graham Road	0.71	0.41	0.3	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	11/12/11
Bioretention C/D Soils, Underdrain	Bioretention	219	West Graham Road	0.24	0.18	0.06	6/30/2005	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Almond Creek, Almond Creek UT (XYA),	Public	Not required	11/12/11
Underground Detention Bioretention C/D Soils, Underdrain	Piped Detention	1	West Jackson Street	1.309	0.874	0.435	06/19/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Chickahominy River, North Run,	Private	None	06/20/13
	Bioretention Basin	1600	West Laburnum Ave	0.87	0.71	0.16	6/30/2005	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT Almond Creek, Almond Creek UT (XYA),	Public	Not required	06/21/10
Underground Detention Bioretention A/B Soils, Underdrain	Piped Detention	1200	West Marshall Street	0.88	0.88	0	07/10/13	20802060101	Broad Rock Creek, Gillies Creek, Goode Creek, Upham Brook, Upham Brook UT (XAR), Upham Brook UT (XFP)	Private	None	07/10/13
	Bioretention	33A	Westhampton Way	0.23	0.13	0.1	10/07/09	20802060403	Chickahominy River, North Run, Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Private	None	03/17/14
Underground Detention	Piped Detention	33A	Westhampton Way	0.23	0.13	0.1	10/07/09	20802060403	Upham Brook, Upham Brook UT (XAR), Upham Brook UT James River, Slate River,	Private	None	03/17/14
Filtering Practices	Filtterra™	603	Westover Hills Blvd	0.72	0.64	0.08	07/11/13	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Filtering Practices	Filtterra™	603	Westover Hills Blvd	0.71	0.63	0.08	07/11/13	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek James River, Slate River,	Private	None	
Dry Detention Ponds	Detention Pond	2511	Wise Street	0.153	0.051	0.007	02/20/10	20802050607	Powwhite Creek, Rattlesnake Creek, Reedy Creek	Private	None	03/22/14

Attachment D : List of new BMPs in 2014

Facility Location		Impaired Water Segment	HUC 6th order	Stormwater Management Facility Type	Acres Treated			Date Brought On Line	Ownership	Maintenance Agreement	Most Recent Inspection
Address	Description				Imp. Acres	Perv. Acres	Total Acres				

MS4 Areas BMPs

5228 Hull Street Rd	O'Reilly Automotive Stores, Inc	James River, Almond Creek	020802060101	Detention Pond	0.18	0.95	1.13	03/13/14	private	pending	03/13/14
302 Long Lane	James River, Little Westham Creek	James River, Westham Creek	020802050607	Vegetated Filter Strip	0.28	0.66	0.940	08/02/13	private	pending	08/02/13
2803 Dock St	In Chesbay (RMA) at Great Shiplock Park	James River, Almond Creek	020802060101	Pipe Detention	0.236	0.174	0.410	07/02/13	public	NA	07/02/14
1600 Laburnum Ave	RPS/ Linwood Holton ES	Upham Brook	020802060403	Bio-retention	0.71	0.16	0.87	02/01/14	public	NA	02/01/14
1250 Ingram Ave	RPS School Board Maint bldg	James River, Almond Creek	020802060101	Pipe Detention	0.92	1.62	2.54	01/04/14	public	NA	01/04/14
1100 Libbie Ave	St. Mary's Hospital	Upham Brook	020802060403	Pipe Detention	0.7	0.6	1.300	05/05/14	private	no	05/05/14
2128 Hull Street	Dollar General	James River, Little Westham Creek	020802050607	Detention Pond	2.63	0.45	3.08	01/03/14	private	no	01/03/14
315 Cowardin Ave	Dollar Tree	James River, Little Westham Creek	020802050607	Pipe Detention	0.72	0	0.72	04/01/14	private	no	04/01/14

Nutrient Credit Projects

3600 Deepwater Terminal Rd	In Chesbay: 3800 Deepwater Terminal LLC	James River, Almond Creek	020802060101	Nutrient Credits			37.3	04/14/13	private	no	04/14/13
1100 Libbie Ave	St. Mary's Hospital	Upham Brook	020802060403	Nutrient Credits			1.322	05/05/14	private	no	05/05/14

City of Richmond SWPPP Determination List

Owner	Facility Name	Facility Address	Operation(s)*	Notes	Inspector	SWPPP?
DPR	Forest Hill Park Field Office	4001 Stonewall Avenue	ESM, MS, PSF	MS4	VR	Required
DPR	Byrd Park Field Office	2301 Amelia Street	ESM, MS, PSF	MS4	VR	Required
DPR	Oakwood Cemetery	3101 Nine Mile Road	ESM, MS	CS, MS4	VR	Required
DPR	Riverview Cemetery	1305 Randolph Street	ESM, MS, PSF	CS, MS4	VR	Required
DPR	Maury-Mount Olivette Cemetery	2700 Maury Street	ESM, MS	MS4	EF	Required
DPR	Operations Center	823 Azalea Avenue	ESM, MS, PSF	MS4	EF	Required
DPU	Operations Center	2701 Kern Avenue	ESM, MS, PSF, VSM	CS,MS4	VR	Required
DPW	Parker Field Operations Center	2705 N. Boulevard	ESM, MS, SSF, VSM	CS	VR	Required
DPW	Urban Forestry	800 Forest Lawn Drive	ESM, VSM	MS4	EF	Required
DPW	Grounds Maintenance	6120 Warwick Road	ESM, MS, PSF, VSM	MS4	EF	Required
DPW	Main Street Station	1500 E. Main Street	ESM, VSM	CS	EF	Not Required
DPW	Richmond Ambulance Authority	2400 Hermitage Road	VSM	CS	EF	Required
DPW	Whitcomb Laydown Yard	2100 Whitcomb Street	PW, MS, ESM	MS4	VR	Required
DPW	First Tee Public Golf Course	500 School Street	PSF	CS	EF	Required
RPS	Arlington Road Warehouse	1722 Arlington Road	MS	CS	EF	Required
RPS	Plant and Special Services	2907 N. Boulevard	ESM, VSM, MS	CS	VR	Required
RPS	Transit Warehouse	3501 Belt Boulevard	VSM	MS4	VR	Required
RPS	School Bus Maintenance	1903 Chamberlayne Avenue	VSM	MS4	EF	Required
RPS	Maintenance Yard	7400 Forest Hill Avenue	SSF	MS4	VR	Required

* Composting Facilities = CF, Equipment Storage and Maintenance = ESM, Material Storage Yards = MS, Pesticide Storage Facility = PSF, , Public Works Yards = PW, Recycling Facility = RF, Salt Storage Facility = SSF, Solid Waste Handling and Transfer = SWF, Vehicle Storage and Maintenance = VSM